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Major Household Appliances: A Lesson in Distribution

A significant element in marketing costs is the middleman's margin. How were these margins affected by the postwar price squeeze in the major household appliance industry?

WHAT IS THE SIGNIFICANCE of middlemen's operating margins? This paper suggests that the behavior of margins over time affords a clue to potential friction in marketing channels. It is therefore worth some effort to monitor margins in order that efficiency in distribution may be enhanced.

For several reasons, it is difficult to secure operationally useful margin data. This article presents one way—imperfect, but usable—of dealing with this difficulty. The major household appliance industry is used to illustrate how structural change can cause friction among middlemen. Other industries might draw a lesson from this example.

The function of middlemen. The institutional structure of marketing has been described as adaptive.[1] It is said to adjust its form to its function. As this function changes so also does the configuration of institutions. Thus, the general store gave way to mail-order selling, the ma-and-pa store to the supermarket, the full-service specialty store to the discount house, and so on.

What is this "function" to which institutions supposedly pay chameleon-like tribute? At least from

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the standpoint of producers, it is to afford efficient access to markets.[2] In the manufacturer's perspective, for example, the institutional structure of marketing and the middlemen comprising it represent a means of reaching a desired market. In the case of consumer goods, wholesalers and retailers serve to bridge the spatial-temporal gap between the manufacturer and the ultimate consumers of his products.[3]

Disputes over Margins

Margin is a price. The cost of such access as middlemen afford manufacturers is supposed to be reflected in their margins--the difference between what they charge for a product and what they must pay for it as it moves through the channel of distribution. Thus a "price" is paid for marketing functions performed by these middlemen.[4]

A three-fold controversy. From time to time, the equity of this price has been questioned. Given that a significant element in the total cost of marketing—and therefore in prices paid by ultimate consumers—is reflected in middlemen's margins, controversy inevitably arises regarding the proper role of these intermediaries in a marketing system. The controversy seems to revolve about three basic issues.

- **The question of the level of the margin.**[5] In other words, if margin is construed as a price paid to middlemen for services rendered, the question is: Is the price a just one?
- **The related problem of margin determination.**[6] How and by whom is the price paid middlemen determined?
- **The notion of the relative stickiness of margins**[7] (perhaps the one over which most of the controversy rages). Put another way, the concern here is over whether prices (margins) paid middlemen reflect a current measure of their performance as opposed to some historical or traditional measure. In the context of classical economic theory, this issue may be construed as one concerning whether margins behave competitively.

Significance of margins. That disputes over margin be quickly resolved is of no small concern to many interests. An excessive margin forces the manufacturer to consider alternative routes to market. An inadequate margin militates against effective performance by a middleman—indeed, perhaps to the extent of zero performance. Consumers, although not always explicitly, judge the value added by middlemen and, if it strikes them as less than the incremental cost, sales are jeopardized. In large measure, then, the friction attendant to products moving through their channels of distribution depends on the extent to which all parties concerned are satisfied with margins accorded middlemen.[8]

Postwar Situation

How conflicts arise. Even a casual observer can appreciate that marketing channels are not frictionless. Margin disputes are not exceptional. This is not to say that open hostility between middlemen and manufacturers abounds. However, it would be somewhat naive to assert that typically there exists a perfect communality of interests between them.[9] The ways in which the several parties concerned with middlemen's margins view them may be quite disparate. The market forces giving rise to conflicting views vary among the parties.[10]

Following World War II, the pent-up demand for major appliances for the kitchen and laundry rendered their sale by retailers almost routine. As this demand became satisfied, however, sales became more difficult to effect. To cope with the extraordinary postwar buying, manufacturers had expanded their production facilities to the extent that, when consumer demand began to slacken, excess capacity existed. Manufacturers were therefore ripe for a method which would absorb an increase in their output. Conventional distribution channels simply were inadequate.

Simultaneously, the practice of off-list selling, à la discount house, had been developing in this industry.[11] Although the sources of supply for these enterprising discounters may at first have been questionable, it soon became apparent to manufacturers that this new channel could absorb a great portion of their output.[12] At least two basic forces were at play here.

First, as consumer needs for appliances lessened, their desire for them became more difficult to stimulate. The discounter sought to accomplish this with reduced prices.[13] This would not have been possible, however, except for the substantial and increasing role of the manufacturer in marketing these products. That is, an "off-list" price meant little unless it could be compared with a list price and a list price signified little unless it could be associated with a known and seemingly dependable product.

The second and accompanying force at play, then, was **the evolving phenomenon on the part of manufacturers that has come to be known as "preselling."**[14] In other words, had not manufacturers through national advertising, guarantees, warranties, and promulgated list prices persuaded consumers of the intrinsic value of the appliances, "bargain" prices would have meant little. This is not to imply that manufacturers deliberately encouraged discounters' efforts. All that can logically be inferred from the situation described is that the concomitant occurrence of manufacturers' preselling and retailers' discounting rendered the latter more viable. To suppose causality here is to indulge in idle speculation.

Traditional appliance dealers (and their distributors) saw the increasing volume of goods moving through this new channel as a threat to their security.[15] While the discounting dealer could assert that his lower prices were possible as a result of his lower operating costs (principally fewer customer services), the full-function dealer could not materially pare his operating costs without jeopardizing his differential advantage. Basically, his argument was that his customers wanted many attendant services and were willing to pay for them. A dilemma developed, however, as fewer and fewer consumers could be counted as "his" customers.

Still another factor worked in favor of discounters. As their volume of sales increased, their cost-of-goods-sold tended to decline. This resulted both from their growing ability to command greater quantity discounts and from the likelihood of direct buying from manufacturers (that is, their sales branches).

Fence-Straddling

In sum, then, manufacturers in their efforts to sustain volume felt compelled to court the "new" channel and sustain it through their preselling efforts. At the same time, however, they could not afford to alienate the middlemen comprising the traditional channel, as the associated volume was significant. This "fence-straddling" by manufacturers was accompanied by—perhaps induced—a margin squeeze among some of the middlemen involved. (A "margin squeeze" is not to be confused with a profit squeeze, of course. Although the two are often associated conceptually, the former does not necessarily result in the latter. For example, increased sales volume at a lower margin may yield a higher profit margin.)

The Squeeze

Nature of the squeeze. From one direction, there were forces exerting downward pressure on the retail prices of appliances. Discounters' exploitation of what they considered artificially high prices by traditional dealers is a case in point. Also, to the extent that manufacturers' promotional efforts rendered these products "patronage-indifferent," a lower price afforded a dealer a possible means of insulation. In other words, off-listing dealers reasoned that, if consumers—as a result of manufacturers' efforts—considered the source of their purchase to be of minor significance, then a lower price would certainly afford a particular dealer an otherwise nonexistent competitive advantage. Finally, as previously noted, there was the pressure from consumers for lower prices. In particular, their sophistication as regards the discretionary nature of such a purchase led many dealers to assume a basic price elasticity for these goods. An atmosphere of purchase urgency, therefore, could be effected only through reduced, i.e., "bargain" prices.

As these factors—some voluntary, others imposed—were exerting a widespread downward pressure on retail prices, manufacturers recognized no particular reason to offer relief to middlemen. Indeed, the manufacturers reasoned that, since they were bearing the burden of demand stimulation among consumers, middlemen had no equitable case for relief. Instead of lowering their prices to middlemen, which would have cushioned the effect of lower retail prices and thereby maintained traditional margins, manufacturers, for the most part, held their prices. They reasoned that since the total task of marketing had been reapportioned among channel members—with an increased burden falling on manufacturers—margins should reflect this.

A point of clarification is in order here. To assert that manufacturers were not disposed to lower their prices to middlemen does not *ipso facto* suggest that manufacturers wantonly depressed every middleman's operating margin. It means simply that, in the manufacturer's perspective, **relatively less marketing effort was being exerted by middlemen.** And since margin is a price paid for this effort, reductions were to be expected. Whether, in fact, a given middleman's margin was reduced in the process depended on his operating costs and cost-of-goods-sold. Typically, discounting retailers were not adversely affected but traditional middlemen, dealers, and their distributors, were. Manufacturers' reluctance to relieve these middlemen reflects the *sine qua non* of the margin squeeze.

The foregoing treatment is, of course, retrospective and culpable in that it tends to simplify a historical series of events which was anything but simple and clear-cut as it was occurring.[16] Since the present concern is only one of reference, however, suffice it to say that, while prices received by retailers were declining during this period, the prices charged by manufacturers were not, with the result that there developed a margin squeeze among some middlemen.

As previously noted, by margin is meant the difference between what a market intermediary receives for a product and what must be paid by the intermediary for that product.

How to Measure Margin?

The inadequacy of data. For several reasons, the measurement of middlemen's margins is an elusive proposition. The role of arbiter of channel disputes is typically ascribed to the manufacturer and, since these often center around margin, he needs some means of assessing the problems. Nevertheless, he sometimes is unable to determine just who is involved in the channel for his products. Thus he does not know whose margins to measure. Additionally, there is the problem introduced by various discounts granted buyers by the manufacturer. In other words, it is unreasonable to assume a uniform cost of goods among all similar middlemen, i.e., all distributors, in the channel.

Finally, even though margins may be specified in the manufacturer's administered pricing schedule, there is no assurance that these margins are actually enjoyed by middlemen. Off-list selling to consumers would render such margin assumptions essentially meaningless. It is difficult, then, to measure middlemen's margins with any significant precision and without an inordinate research effort.

Use of CPI and WPI

A convenient expedient. An alternative to the otherwise herculean task of gathering and interpreting margin data is afforded by reasonably accessible secondary data. For the present purpose, the Consumer Price Index and Wholesale Price Index may be used to determine useful, if imperfect, information about margins.

The rationale for using these measures is as follows: The Wholesale Price Index reflects prices received at the first important commercial transaction.[17] In the case of appliances, this means average prices received by manufacturers. The Consumer Price Index, on the other hand, reflects prices paid by consumers—that is, average prices received by retailers. A comparison of the changes in these indices over time, therefore, reflects changes in middlemen's margins.

Some points merit consideration here. First, it must be emphasized that **a comparison of the CPI and WPI does not measure margins; rather it reflects changes in them.** Specifically, it reflects the temporal changes in the average margin available to the aggregation of market intermediaries in the distribution channel. Direct comparisons between the retail (consumer) and wholesale index in a given year are invalid as an indication of relative price levels. Because the two indices are computed from different components, in any given year, the wholesale index may exceed the consumer index. This does not mean that, in such a year, wholesale prices were higher than retail prices. Rather it indicates that relative to the base period wholesale prices increased more (or decreased less) than retail prices. It should also be noted that since this scheme reflects prices at only two levels—sales by manufacturers and sales to consumers—it does not distinguish among middlemen. That is, the margin changes it measures are those of the aggregation of middlemen involved.

In support of the technique, the following points should be considered. Even though it does not measure margins directly, by indicating changes in them it may serve to signal an approaching conflict or, if the change is positive, suggest opportunities for exploitation. Although these advantages are clouded somewhat by the fact that the technique does not distinguish, for example, a retailer from a wholesaler, certainly they are not thereby dissipated.

This simply means that the technique (like quantitative tools in general) needs to be used in conjunction with (in support of) the analyst's knowledge of the phenomenon being studied. In this regard, it may be likened to a physician's use of a thermometer. An elevated temperature may be indicated by this instrument but for diagnosis and prescription of indicated treatment the physician must call on his accumulated knowledge of medicine and the patient and perhaps more measuring devices. Similarly, a comparison of temporal changes in CPI and WPI per se does no more than serve as a monitoring device for the distributive network of an industry. The efficacy of this device depends on who uses it. A thermometer is invaluable to a physician, useful to a nurse, a nuisance to the patient, and dangerous in the hands of a child. Unless the proposed technique can be applied to an existing knowledge of the marketing practices of the industry, it is likely to be utterly useless or, indeed, dangerously misinforming.

To illustrate the use of the technique described above and to lend empirical support to some of the phenomena previously outlined, the price indices for the major household appliance industry may be used. These data are displayed in Table I. The indices apply to the entire product class; that is, they reflect average prices for the several appliances which constitute the industry, namely, ranges, refrigerators, freezers, dishwashers, washing machines, clothes dryers, and ironers. From the standpoint of managerial application, these aggregate measures are not as useful as would be those pertaining to individual products. These latter indices are also available but, inasmuch as the previous discussion has been at the industry level, an aggregate measure of margin seems more appropriate for purposes of illustration. It is understood, of course, that these aggregate indices do not necessarily reflect the margin changes associated with any particular appliance or with any individual middleman. Rather, they reflect a weighted average of the changes associated with all of them.[18]

TABLE I.—PRICE INDICES FOR MAJOR HOUSEHOLD APPLIANCES, 1947–1960
(1947–1949 = 100)

	Wholesale Price Index	Consumer Price Index
1947	97.1	98.4
1948	101.8	103.0
1949	101.1	98.5
1950	101.9	96.7
1951	107.9	102.3
1952	107.3	98.7
1953	108.4	97.0
1954	109.6	92.8
1955	106.8	88.3
1956	105.5	84.1
1957	105.5	84.3
1958	104.7	82.9
1959	104.7	83.0
1960	101.9	82.4

SOURCE: For Wholesale Price Indices: U.S. Department of Commerce, Office of Business Economics, *Business Statistics, 1961* (Washington, D.C.: U.S. Government Printing Office, 1961), p. 38. For Consumer Price Indices: (1947–1958) U.S. Department of Labor, Bureau of Labor Statistics, *Consumer Price Index: Price Indexes for Selected Items and Groups* (Washington, D.C.: U.S. Government Printing Office, 1959), pp. 6–9; (1959–1960) U.S. Department of Labor, Bureau of Labor Statistics, *1960 Statistical Supplement—Monthly Labor Review, Part I* (Washington, D.C.: U.S. Government Printing Office, 1961), p. 21.

One final caveat is in order. **Government price indices do not purport to reflect all prices in effect at a given transactional point.** For example, the Consumer Price Index for major household appliances is not intended to be interpreted as reflecting prices paid by all consumers for all appliances.[19] Rather, this CPI derives from average prices paid by "typical" families for "representative" appliances in each category. Thus, margin changes as measured by these indices may not agree precisely with changes measured in some other fashion. In all likelihood, these government price indices are biased indicators for present purposes. They are heavily weighted in favor of middle-income urban dwellers purchasing other than "top-of-the-line" appliances. Nevertheless, as market analyses show, this market segment is, for the most part, the most

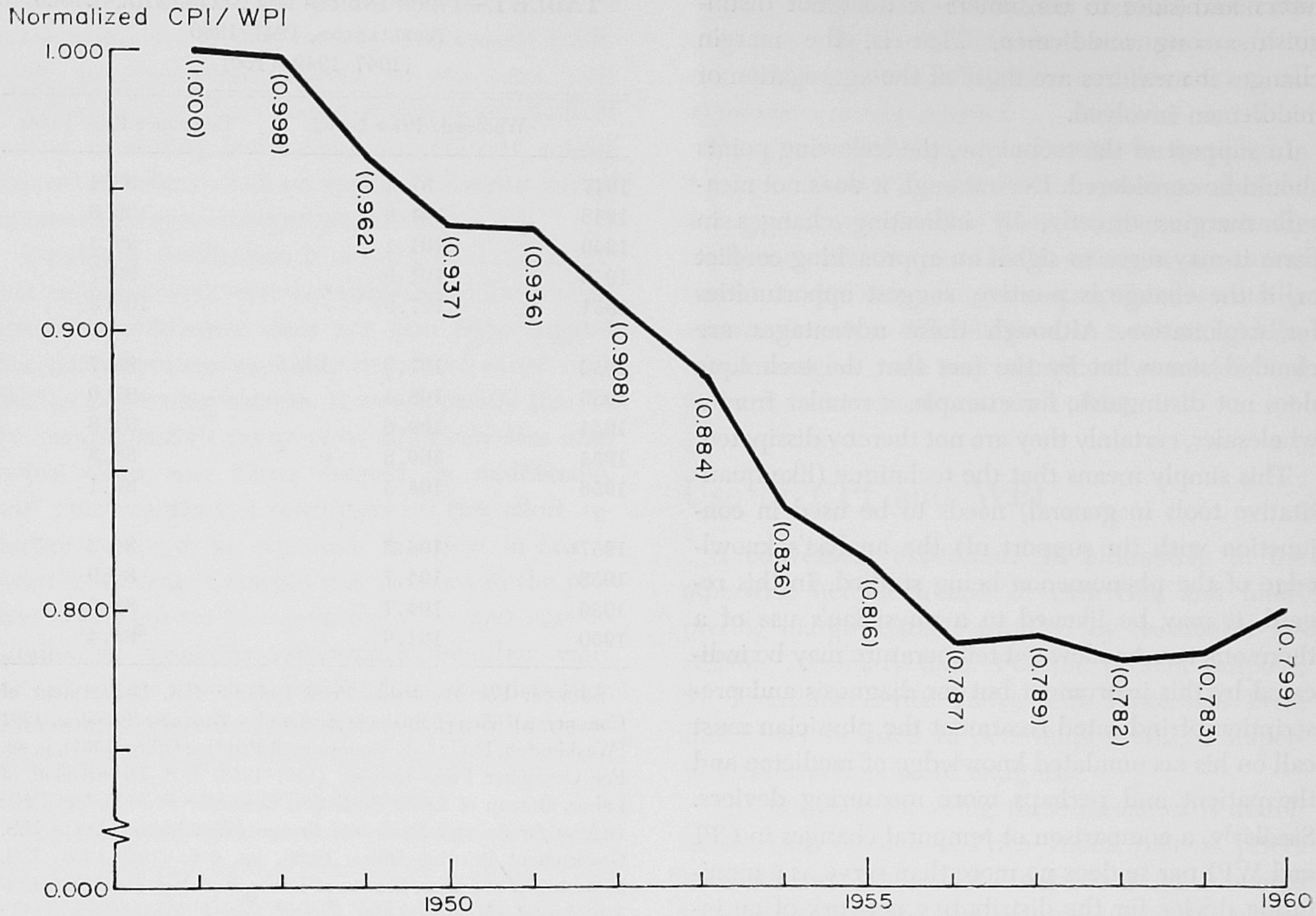

FIG. 1.—NORMALIZED RATIOS OF CPI TO WPI FOR MAJOR HOUSEHOLD APPLIANCES, 1947–1960.

significant one. Therefore, although this technique of measurement is imperfect, it is far from useless—particularly when its relative cost is considered.

Measuring the margin squeeze. As suggested above, margins cannot be measured simply by direct comparison of the consumer and wholesale price indices. **By observing the year-to-year changes in the ratio of these two indices, however, margin changes may be inferred.** Figure 1 depicts the normalized ratios of the CPI to the WPI for the period 1947–1960.[20] These ratios are computed as follows: For each year, the CPI is divided by the WPI. For 1947, for example, this yields (98.4 ÷ 97.1) a ratio of 1.013. To facilitate interpretation this base-period ratio is arbitrarily set equal to one. Each subsequent ratio is then divided by 1.013. That is, for 1948 the computation is 103.0 ÷ 101.8 = 1.011 ÷ 1.013 = 0.998. In other words, the "normalized ratio" figures are index numbers based on 1947 whose ratio equals one.

Since, by this system of reckoning, the 1947 ratio, i.e., 1.000, reflects the state of middlemen's margins in the base period, any departure from 1.000 indicates a change in those margins. Specifically, ratios greater than one would signify larger margins, and ratios less than one would mean smaller margins. In the present case, the tendency for the WPI to rise while the CPI was declining is reflected in the declining CPI to WPI ratios in Figure 1. In other words, **there was a squeeze in middlemen's margins in this industry between 1947 and 1960.**

Again it should be emphasized that these ratios do not measure middlemen's margins. Rather, what is depicted in Figure 1 is a downward trend in the ratio of the CPI to the WPI for these products and therefore a change in margins. As the data show, the squeeze began to loosen toward the latter part of the period in question. During this latter period, the WPI exhibited a rate of change more similar to that of the CPI suggesting that eventually manufacturers' prices behaved more like those of retailers.

The manufacturer's role in the channel. It is customary to think of the manufacturer as the "leader" in a marketing channel. To him falls the responsibility for maintaining order and reducing friction among channel members. Where margins are concerned, it is his task to assure at least workable compromises. When some middlemen's margins are jeopardized, one possible avenue of relief is lower prices by manufacturers. **To sustain a voluminous flow of goods through the channel requires not only response by manufacturers to legitimate margin pressures but also well-timed response.** In other words, relief that comes too late is tantamount to no relief.

However, the ideal reaction time is problematic. For example, a retailer typically is not immediately aware that he is experiencing a squeeze in margin. It takes time for him to determine that depressed prices are not just an ephemeral occurrence. The more middlemen so involved, the longer will be the time elapsed before a manufacturer is even aware of his dealers' plight. If such a plight is genuine, of course, it deserves immediate relief, but, because of inadequacies in the information systems involved, this is impossible. Thus, even the most well-intentioned manufacturer may appear a villain in the eyes of afflicted middlemen.

No Operative Relationship

An empirical analysis. In an effort to determine whether manufacturers respond to middlemen's margin pressures with lower prices, a statistical analysis of the problem was attempted. It was reasoned that, if manufacturers do respond to these pressures, then changes in the CPI for major household appliances should explain a significant proportion of the changes in the WPI. Further, any "stickiness" in manufacturers' response would be reflected by a lagged relationship between the two indices.

The analysis was spectacularly unsuccessful. No sensible regression of WPI on CPI could be established. Several reasons account for this.

First, since the data for analysis are time series, there is the question of autocorrelation. That is, the value of an index in any given year is not independent of its value in previous years. A test for autocorrelation, Hart's mean-square-successive-difference method, indicated its presence in both series.[21] Although a computational accommodation can be introduced in order to cope with this complication, one does not do so with complete impunity. Any computed "causes" of WPI variation are questionable because of this autocorrelation in WPI.

Second, there is the question of the dependence of the two series. One of the fundamental assumptions made in regression analysis is that the series being regressed are statistically independent. In other words, the CPI and WPI must not be the products of a common set of determinants if they are to be characterized as "independent." Even though these two series behaved far less "dependently" than one's intuition might suppose, the fact remains that any computed relationship between them harbors an indeterminant element of overstatement.

The third factor, and the one which most prompted analytical discretion, however, was the correlation coefficients displayed in Table II. As these statistics show, it would be most heroic to assert a functional relationship between changes in CPI and WPI—lagged or not. These data indicate that for all practical purposes nothing approaching concomitant similarity exists in these series. And it taxes the imagination to ascribe a causal dimension to a relationship which, at best, requires three years to come to fruition.

TABLE II.—Correlation of CPI with WPI for Major Household Appliances, 1947–1960

No. Years Lead in CPI	Correlation with WPI	Significance at .05 Level
0	−.106	No
1	−.102	No
2	.306	No
3	.638	Yes
4	.737	Yes
5	.712	Yes
6	.741	Yes

In the light of the autoregressive nature of the WPI series and the unresolved question of its independence, it is difficult to attach any particular meaning to the relationships depicted in Table II. It may be **statistically** correct that CPI changes precede WPI changes by three, four, five, or six years, but it is rather unlikely that this time lag reflects any operative relationship between the two series. Three to six years is time enough for too many variables to intervene.

Possible Interpretations

Interpretation of findings. The abortive effort described above indicates that the problem of explaining the behavior of the WPI in terms of the CPI is not a "clean" one. Discretion must be exercised lest "analysis" yield dangerous misinformation. That no reasonable relationship existed between the CPI and WPI, however, is useful to know. To the extent that, during the period 1947–1960, some middlemen experienced a margin squeeze, **an absence of meaningful correlation between the two series suggests that manufacturers were not particularly sensitive to the plight of those middlemen so affected.**

This suggests several interesting possibilities. For one, the middleman's rationale for resale price maintenance becomes eminently more reasonable. Although the notion of resale price maintenance or so-called "fair trade" has been roundly criticized in the marketing literature, the condemnations tend to be largely on an a priori basis.[22] It is entirely possible that critics have hypothesized themselves right out of the real world and that, in fact, retailers may indeed have a case for relief.

The conventional wisdom, which alludes to the stifling effects of fair trade on competition, assumes that retailers who favor it do so in order that they may propagate or perpetuate inefficiency under an umbrella of maintained prices. Perhaps so. However, if an otherwise efficient retailer determines that, because of shrinking margins which the manufacturer is reluctant to cushion, he faces a moribund prognosis, is he not compelled to plead for fair trade enforcement? He may not consider this the ideal solution to his dilemma, but it is one solution.

The market forces giving rise to the structural change in the distributive segment of this industry—the emergence of a new, more streamlined channel—were not wholly beneficial. Friction developed as a result of some middlemen's inability to adjust rapidly to these forces. That the foregoing analysis has failed to quantify the dimensions of this friction and to articulate manufacturers' treatment of it does not render it insignificant, however. Friction, per se, in a marketing channel is to be discouraged and, in the present case, the dimensions of the associated distributive inefficiency seem to have been substantial. **In a dynamic world, friction may be the price of improvement.** Improvement (structural changes in distribution channels, in this case) should be sought—but always at the lowest possible price.

It would be useful to determine how widely the methods used in this study have application. Clearly, industries utilizing distribution channels that comprise few middlemen afford the most lucrative possibilities. For example, where a manufacturer-retailer-consumer channel obtains, as often it does for appliances, government price indices would seem intuitively more valid a source for margin information than where more complicated channel structures must be accommodated. Obviously, industries whose products are not reflected in the Consumer Price Index are precluded from consideration.

Finally, it might be interesting to determine empirically whether middlemen's margins behave in any discernible historical pattern so that, armed with this information, manufacturers might more effectively contemplate long-range distribution strategies. Such strategies might well lead to more efficient marketing systems.

Conclusions

Summary. This paper has suggested a convenient approach to the difficult, yet important, problem of measuring middlemen's margins. The approach outlined is imperfect, to be sure. Indeed, by using the Consumer Price Index and the Wholesale Price Index for major household appliances, margins per se were not measured. Rather, only changes in them were treated. It might well be argued, however, that it is not the margins themselves that are significant but rather the changes therein that lead to problems in marketing channels. Thus, perhaps the inherent weakness in the proposed technique is more an academic question than an operational limitation.

There are certainly operational limitations on the technique proposed, however. It is an indirect, macro, measure of a marketing phenomenon that in the last analysis should be evaluated on a micro level. Its convenience comes at the cost of its inability to distinguish among different types of resellers. A note of caution is offered to those who would attempt indiscriminately to apply the measure, therefore. A great deal of circumstantial knowledge is necessary before quasi-micro inferences can be drawn.

Illustrating how the proposed technique might be applied, a postwar margin squeeze in the major household appliance industry was demonstrated. The "squeeze" means simply that, during the period in question, a decreasing percentage of the consumer price for appliances was available to compensate market intermediaries for their efforts. Those middlemen—typically off-listing retailers in the "new" channel—able to "live with" this occurrence had only the normal competitive problems with which to contend. Those traditional middlemen who, for various reasons, were unable to adjust quickly experienced not only these problems but a margin squeeze as well. If manufacturers offered any significant relief (by way of lower prices) to these middlemen, it was slow in coming.

REFERENCES

1. Perhaps the classic reference on the institutional structure of marketing is Edward W. Duddy and David A. Revzan, *Marketing: An Institutional Approach* (2d ed.; New York: McGraw-Hill Book Co., Inc., 1953), esp. Part VI.

2. Of course this is only one of many ways of looking at middlemen. From the standpoint of consumers, or of middlemen themselves, their function and the structural configuration best able to accomplish it may vary. See Wroe Alderson, *Marketing Behavior and Executive Action* (Homewood, Ill.: Richard D. Irwin, Inc., 1957).

3. Obviously the manufacturer need not use all or any part of the existing structure of distribution in order to reach consumers. For a concise treatment of this decision, see John A. Howard, *Marketing Management: Analysis and Planning* (Rev. ed.; Homewood, Ill.: Richard D. Irwin, Inc., 1963), Chaps. 8 and 11.

4. Paul D. Converse, Harvey W. Huegy, and Robert V. Mitchell, *Elements of Marketing* (7th ed.; Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1965), pp. 534–535.

5. This question, one way or another, is treated under the "cost-of-marketing" studies. One of the more comprehensive such studies is Reavis Cox, with Charles S. Goodman and Thomas C. Fichandler, *Distribution in a High-Level Economy* (Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1965).

6. In the end, middlemen's margins are determined by some combination of influence from producers and middlemen. For a comprehensive treatment of the many possible influences at play, see Roland S. Vaile, E. T. Grether, and Reavis Cox, *Marketing in the American Economy* (New York: The Ronald Press Co., 1952), Chaps. 20, 21, and 22.

7. This issue was most clearly brought to light with the advent of the discount house which, presumably, made its inroads under the umbrella of the artificially high margins and prices of traditional retailers. For an articulate discussion of this point, see Franklin W. Gilchrist, "The Discount House and Channels of Distribution," *Frontiers in Marketing Thought,* ed., Stewart H. Rewolt (Bloomington, Ind.: Indiana University Press, 1955), pp. 45–59.

8. This is not to imply that margins are the only (and, in some cases, even the most important) consideration in channel relations. It is simply to assert that, given the economic character of marketing enterprises, their functioning is likely to be far more responsive to economic stimuli than to other types.

9. Valentine F. Ridgeway, "Administration of Manufacturer-Dealer Systems," *Administrative Science Quarterly,* I:4 (March 1957), 464–483.

10. Warren J. Wittreich, "Misunderstanding the Retailer," *Harvard Business Review,* XL:3 (May-June 1962), 147 ff.

11. Gilchrist, *op. cit.* Also see "Discount Houses Big, National and Maybe a Retail Revolution," *Tide,* May 8, 1954, pp. 18–25; June 5, 1954, pp. 26–27.

12. For example, see "The Builder's the Hot Market," *Business Week,* Feb. 4, 1961, p. 82.

13. The dimensions of the price reductions are reported in Allen F. Jung, "Price Variations Among Discount Houses and Other Retailers," *Journal of Retailing,* Winter 1960–61, pp. 201–206, and "Who Pays List Price," *Fortune,* June 1952, pp. 104 ff.

14. Perry Bliss, "Preretailing and Consumer Buying Patterns over Time," *Journal of Marketing,* XXI:1 (July 1956), 83–85.

15. "Appliance Dealers Protest to FTC Over 'Low Price' Sales to Builders," *Business Week,* Sept. 22, 1956, p. 56; "Dealers Find a New Enemy," *Business Week,* Jan. 28, 1956, p. 61; Richard E. Westervelt, "The Discount House Problem," *Journal of Retailing,* Summer 1954, pp. 69 ff.

16. For further insights into the distribution of appliances, see Anthony E. Cascino, "Household Washing Machines," *Marketing Channels,* ed. Richard M. Clewett (Homewood, Ill.: Richard D. Irwin, Inc., 1954), pp. 171–194; also, Harvey E. Weimer, "Some Changing Patterns of Product Design and Distribution in the Major Appliance Industry," *Marketing's Role in Scientific Management,* ed. Robert L. Clewett (Chicago: American Marketing Association, 1957), pp. 540–547.

17. For a summary statement of the nature, compilation, and associated deficiencies of this measure, see "The Wholesale Price Index," U.S. Cong., Joint Economic Committee, *Government Price Statistics, Hearings . . . January 24, 1961* (Washington, D.C.: U.S. Government Printing Office, 1961), pp. 61-71.

18. There may be some question as regards the relevance of these aggregate indices to some specific kinds of middlemen. In effect, that is, to what kinds of middlemen does this "average" apply? Since price indices are inherently macro measures, this is a difficult question. It may be approached better perhaps in terms of what kinds of middlemen it does not apply to. One obvious exclusion is those selling "private" or "distributors'" brands, such as Sears, Roebuck and Company, Montgomery Ward, and Western Auto Stores. The margins attendant to these brands—their levels and methods of determination—typically differ from the case of producers' brands. So also do the channel relations. Thus, although the notion of margin employed here is incomplete (to the extent that it clouds the distributors' brands–producers' brands issue), the error is tolerable, for the intent of the analysis is to gauge margin changes that are otherwise difficult to measure—namely, those of the independent, traditional middleman. Where distributors' brands are involved so also is control over distribution, which implies information about realized margins. In this case, there is no need for a technique such as proposed in this paper.

The extent to which the CPI to WPI ratios reflecting margin changes may be adulterated (i.e., may overstate a margin squeeze) is suggested by the fact that, in some appliance categories (e.g., automatic washers, gas dryers, and freezers), distributors' brand sales approximate some 20 per cent of annual industry sales. See *Look National Appliance Survey, Volume One—Major Household Appliances* (New York: Cowles Magazine and Broadcasting, Inc., 1961). Although precise measures are not available, it is generally held that the percentage of industry sales accounted for by distributors' brands exhibited small to moderate increases during the period, 1947–1960.

19. For some candid observations on this point, see "The Consumer Price Index," *Government Price Statistics, op. cit.,* pp. 51–59.

20. Comparable data not available after 1960.

21. B. I. Hart, "Significance Levels for the Ratio of the Mean Square Successive Difference to the Variance," *Annals of Mathematical Statistics,* XII:4 (1942), 446.

22. For a treatment of resale price maintenance which takes a comparatively broad perspective, see Clare E. Griffin, "An Economist's View of 'Fair Trade'," *Michigan Business Review,* X:5 (Nov. 1958), 21–26.